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O"BRIEN JONES, PLLC (w/Ford Motor Co.)
1951 Kidwell Drive
Suite 740
Tysons Corner, VA 22182

EXAMINER	
PILKINGTON, JAMES	

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docketing@obrienjones.com
susanne.jones@obrienjones.com
elizabeth.burke@obrienjones.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARK RICHES and CHRIS OAKWOOD

Appeal 2011-011503
Application 11/228,760
Technology Center 3600

Before ANNETTE R. REIMERS, RICHARD E. RICE and CARL M. DeFRANCO, *Administrative Patent Judges*.

RICE, Administrative *Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Mark Riches, et al. (Appellants) seek our review under 35 U.S.C. § 134 of the Examiner's rejection of claims 1-3 and 6-14. App. Br. 2.[1] We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

CLAIMED SUBJECT MATTER

The claimed subject matter "relates generally to wheel hubs and, more particularly, to a roll formed hub of the wheel hub secured to a bearing assembly, enabling wheel bearing retention." Spec. para. [001]. Claims 1, 7 and 11 are independent. Claim 1 is reproduced below:

> 1. A wheel and hub assembly comprising:
>
> *a wheel that, in use, does not utilize a central bolt mechanism*;
>
> a roll formed hub having a shoulder at a distal end thereof, the shoulder extending in a direction that is different than a remaining portion of the roll formed hub and the shoulder having an inner surface;
>
> at least one bearing enabling rotation of the hub assembly;
>
> an inner ring in communication with the at least one bearing and the roll formed hub, the inner ring having an outer surface; and
>
> *a fusion weld adapted to lock the outer surface of the inner ring to the inner surface of the shoulder of the roll formed hub*.

App. Br., Claims App'x (emphasis added).

[1] The Examiner has withdrawn the rejection of claims 1-3 and 6-14 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Ans. 2; *see also* App. Br. 5.

REFERENCES RELIED ON BY THE EXAMINER

Fukumura	US 5,607,241	Mar. 4, 1997
Miyazaki	US 6,672,770 B2	Jan. 6, 2004

THE REJECTION

Claims 1-3 and 6-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyazaki and Fukumura.

ANALYSIS

Claims 1-3, 7, 9-11, 13 and 14:

Appellants argue claims 1, 7 and 11 as a group. App. Br. 7-10. We select claim 1 as representative of the group, and claims 7 and 11 therefore rise or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(vii). Further, as to claims 2, 3, 9, 10, 13 and 14, Appellants solely rely for patentability on the dependency of those claims from claims 1, 7 and 11, respectively. App. Br. 10. Accordingly, claims 2, 3, 9, 10, 13 and 14 also rise or fall with claim 1.

The Examiner finds that Miyazaki discloses "a wheel and hub assembly comprising: a wheel that, in use, does not utilize a central bolt mechanism (see Figure 1 which shows the hub without a bolt) . . . ." Ans. 3. The Examiner also finds that Miyazaki discloses the other limitations of claims 1-3, 6 and 11-14, except

> a fusion weld adapted to lock the outer surface of the inner ring to the inner surface of the shoulder of the roll formed hub, wherein the fusion weld is a laser weld or an electron beam weld and wherein the fusion weld extends 360 degrees around the inner ring between the inner surface of the shoulder and the outer surface of the inner ring.

Ans. 4. For the fusion weld requirements, the Examiner relies on Fukumura's disclosure of

> a fusion weld (5) adapted to lock a ring (2) of a bearing assembly to a hub unit (3), wherein the fusion weld (5) is a laser weld or an electron beam weld (both disclosed see C3/L8-12) and wherein the fusion weld extends 360 degrees around the ring (2) at the point where the ring (2) is in communication with the hub (3) for the purpose of providing a reliable (strong) connection between the ring and hub (Column 2, lines 35-36).

Id. The Examiner concludes that it would have been obvious

> to modify Miyazaki and provide a fusion weld adapted to lock the outer surface of the inner ring to the inner surface of the shoulder of the roll formed hub, wherein the fusion weld is a laser weld or an electron beam weld and wherein the fusion weld extends 360 degrees around the inner ring between the inner surface of the shoulder and the outer surface of the inner ring, as taught by Fukumura, for the purpose of providing a reliable connection between the ring and the hub.

Id.

Appellants argue that: (1) "the Figures of Miyazaki et al. that do not disclose a central bolt mechanism are Figures representing a *driven wheel*;" (2) "the *non-driven wheels* of Miyazaki et al. include a central bolt mechanism as shown in FIGS. 9 and 10;" (3) "[t]he hub assembly of a *driven wheel* is mounted directly to the shaft, and thus uses the shaft to prevent yield due to lateral forces;" and (4) "[t]herefore, mounting directly to the shaft so that the shaft reinforces the hub assembly to prevent yielding allows the shaft to obviate use of a weld - a weld is not needed to prevent yield because the shaft prevents yield." App. Br. 8 (emphasis added). Appellants additionally argue that "Miyazaki et al.'s driven wheel hub assembly is reinforce (sic) by being mounted to the shaft, and Miyazaki et al.'s non-driven wheel and hub assembly is shown in FIGS. 9 and 10 and

includes a central bolt mechanism (nut 40 is threaded onto a portion 37 of the drive shaft 36 to clamp the inner ring in position)" and that "[t]herefore, neither Miyazaki et al.'s driven wheel nor its non-driven wheel need assistance in preventing yield due to lateral forces." *Id.* at 9.

Appellants' arguments do not persuade us of error in the Examiner's finding that Miyazaki's Figure 1 embodiment discloses "a wheel that, in use, does not utilize a central bolt mechanism." *See* Ans. 3. In particular, Appellants have not persuaded us that Miyazaki's Figure 1 discloses a driven wheel embodiment. *See* App. Br. 8-9. To the contrary, Miyazaki expressly states that Figure 1 depicts a "non-driven wheel" embodiment. *See* Miyazaki, col. 14, l. 61 – col. 15, l. 4; *see also* Ans. 5. Because, as found by the Examiner, Figure 1 of Miyazaki discloses a non-driven wheel embodiment that does not utilize a central bolt mechanism, we also do not find persuasive Appellants' argument that neither Miyazaki's driven wheel nor its non-driven wheel need assistance in preventing yield due to lateral forces. *See* App. Br. 9.

Appellants also argue that "Fukumura has no need for a weld to prevent yielding of a roll formed hub to lateral forces" and, more specifically, that

> [i]f the teachings of Miyazaki et al. (e.g., the roll formed hub) were applied to a wheel such as Fukumura that locks the hub to a drive shaft, the drive shaft would necessarily be situated in a position to reinforce the hub shoulder's position against the inner ring as shown in Miyazaki et al.'s FIGS. 9 and 10, such that a fusion weld would not be necessary because the drive shaft would prevent yielding and elongation of the hub shoulder.

App. Br. 9.

This argument is not persuasive because it fails to address the Examiner's obviousness rationale, i.e., modification of Miyazaki (Figure 1) utilizing a fusion weld as taught by Fukumura. Further, we note that Appellants did not file a Reply Brief addressing the Examiner's Response to Argument, as set forth on page 6, lines 7-21 of the Answer, in which the Examiner explained that the addition of Fukumura's third coupling method (laser weld) to the roll-formed hub of Miyazaki's Figure 1 would provide a reliable connection between the components and reinforce the two other coupling arrangements already in Miyazaki ("the press fit and roll formed portions") in the same manner that the weld reinforces the two other coupling arrangements in Fukumura ("serrations (19) which prevent relative rotation and a shrink ring (21) which prevents axial movement"). *See* Ans. 6.

Accordingly, we sustain the Examiner's rejection of claims 1-3, 7, 9-11, 13 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Miyazaki and Fukumura.

Claims 6, 8 and 12:

Appellants argue claims 6, 8 and 12 as a group. App. Br. 10-11. We select claim 6 as representative of the group, and claims 8 and 12 therefore rise or fall with claim 6.

Claim 6 requires that "the fusion weld extends 360 degrees around the inner ring between the inner surface of the shoulder and the outer surface of the inner ring."

In addition to relying on the dependency of claim 6 from claim 1, Appellants argue that

> [b]ecause it would not have been obvious to weld the wheel and hub assembly of Miyazaki et al. for the various reasons set forth above, it certainly would not have been obvious to provide a fusion weld that extends 360 degrees, much less a fusion weld that extends 360 degrees around the inner ring between the inner surface of the shoulder and the outer surface of the inner ring.

App. Br. 10-11. We do not find this argument to be persuasive because, as discussed *supra* with respect to claim 1, we agree with the Examiner's determination that it would have been obvious to weld the wheel and hub assembly of Miyazaki (Figure 1) as taught by Fukumura.

Accordingly, we sustain the Examiner's rejection of claims 6, 8 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Miyazaki and Fukumura.

DECISION

We affirm the rejection of claims 1-3 and 6-14.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a) (1)(iv).

AFFIRMED

Klh